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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/817,012
Filing Date: April 01, 2004
Appellant(s): CHILDERS ET AL.

Steven Nichols
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/30/09 appealing from the Office action mailed 1/30/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,671,007	SONGER	09-1997
6,335,755	McLaine	01-2002
5,870,137	STUETTLER	02-1999

4,236,172 KRASNOPEROV 11-1980

US Publication Number 2004/0252756 Smith 12-2004

US Publication Number 2003/0112507 Divelbiss 06-2003

US Publication Number 2003/0234790 Hochmuth 12-2003

Anderson, "Uniform Color Illumination for Scrolling Color LCoS Projection" 2002

Sato, "New Type Electro-Holographic Display System Using LCD's - 2002

Bolas, "New Research and Explorations into Multiuser Immersive Display Systems" - Jan/Feb 2004

US Publication Number 2004/0058715 Taniguchi 03-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 7, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith.

Referring to claim 1, Songer discloses a method of displaying an image frame in three dimensions (3D) or in two dimensions (2D) with a single light engine (abstract, lines 1-3), said method comprising: generating a left image sub-frame and a right image

sub-frame if said 3D mode of operation is selected (abstract, lines 20-21); and generating a 2D image frame if said 2D mode of operation is selected (abstract, lines 22-23); wherein said left image sub-frame defines a visual perspective of a left eye and said right image sub-frame defines a visual perspective of a right eye during a frame period if said 3D mode of operation is selected and said 2D image frame is displayed during said frame period if said 2D mode of operation is selected (column 5, lines 40-41, 48-50).

Songer does not disclose a system for selecting between a 2D mode of operation and a separate 3D mode of operation; and including a projection display for a 2D/3D projection system.

In an analogous art, McLaine teaches a system for selecting between a 2D mode of operation and a separate 3D mode of operation (column 8, lines 63-66).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D mode switch taught by McLaine to the system disclosed by Songer. The motivation would have been to allow the user to simply switch between the two modes, thereby increasing the system's usability (McLaine: column 8, lines 63-66).

Songer and McLaine do not disclose a system including a projection display for a 2D/3D projection system.

In an analogous art, Smith teaches a system including a projection display for a 2D/3D projection system (paragraph 26).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D projector taught by Smith to the system disclosed by Songer and McLaine. The motivation would have been to allow the system to display a large image size cheaper than with a CRT or LCD display.

Referring to claim 5, Songer discloses a method of claim 1, further comprising: dividing said frame period into a first sub-frame period and a second sub-frame period; displaying said left image sub-frame during said first sub-frame period; and displaying said right image sub-frame during said second sub-frame period (column 9, lines 59-65; figure 15).

Referring to claim 6, Songer discloses a method of claim 1, further comprising: dividing said frame period into a number of sub-frame periods; displaying said left image sub-frame during one or more of said sub- frame periods; and displaying said right image sub-frame during one or more of said sub- frame periods; wherein said left and right image sub-frames are displayed in an interleaved manner (column 10, lines 6-10; figure 16).

Referring to claim 7, Songer discloses a method of claim 1, further comprising viewing said left and right image sub-frames through glasses comprising a left lens configured to allow a left eye to only perceive said left image sub-frame and a right lens

configured to allow a right eye to only perceive said right image sub-frame (column 5, lines 63-67; column 6, lines 30-35).

Referring to claim 46, Songer discloses a system of claim 27, wherein said mode of operation is selected automatically without user intervention (column 6, lines 30-35; Note: since the user does not need to have contact with the display system to use it in 3D mode, it is interpreted as being selected (from the system's point of view) automatically without any interference from the user).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith as applied to claim 1 above, and further in view of Divelbiss.

Referring to claim 18, Songer, McLaine, and Smith do not disclose a method of claim 1, wherein said left imago sub-frame and said fight image sub-frame have differing polarizations.

In an analogous art, Divelbiss teaches a method of claim 1, wherein said left imago sub-frame and said fight image sub-frame have differing polarizations (page 17, paragraph 215, lines 1-5).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the polarizations taught by Divelbiss to the system disclosed by Songer, McLaine, and Smith. The motivation would have been to enable the device to provide a 3D image without using an expensive shutter driven system.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith as applied to claim 1 above, and further in view of Stuettler.

Referring to claim 2, Songer discloses a method of claim 1, wherein said step of generating said left and right image sub-frames comprises: generating left and right image sub-frame data defining said left and right image sub-frames.

Songer, McLaine and Smith do not disclose a method where storing said right image sub-frame data in a second buffer; and controlling a spatial light modulator with said left and right image sub- frame data in said first and second buffers to generate said left and right image sub-frames.

In an analogous art, Stuettler teaches a method where storing said right image sub-frame data in a second buffer; and controlling a spatial light modulator with said left and right image sub- frame data in said first and second buffers to generate said left and right image sub-frames (column 2, lines 52-56; figure 4, parts 8a).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to add the buffers from Stuettler to the method disclosed by Songer, McLaine, and Smith. The motivation for doing this would have been to allow for the display output to be synced up with the shutter glasses by controlling the outputs of the buffer.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith in view of Stuettler as applied to claim 2 above, and further in view of Hochmuth.

Referring to claim 3, Songer, McLaine, Smith and Stuettler do not disclose a method of claim 2, wherein a single buffer unit comprises said first and second buffers.

In an analogous art, Hochmuth teaches a method of claim 2, wherein a single buffer unit comprises said first and second buffers (page 1, paragraph 9, lines 8-15).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the two buffers disclosed in Stuettler with the single buffer from Hochmuth. The motivation for doing this would have been to reduce the amount of control circuitry by only needing to control a single buffer unit.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith as applied to claim 1 above, and further in view of Hochmuth.

Referring to claim 4, Songer, McLaine and Smith do not disclose a method of claim 1, wherein said step of generating said 2D image frame comprises: generating 2D image frame data defining said 2D image frame; storing said 2D image frame data in a buffer; and controlling a spatial light modulator with said 2D image frame data in said buffer to generate said 2D image frame.

In an analogous art, Hochmuth teaches a method of claim 1, wherein said step of generating said 2D image frame comprises: generating 2D image frame data defining

said 2D image frame; storing said 2D image frame data in a buffer; and controlling a spatial light modulator with said 2D image frame data in said buffer to generate said 2D image frame (page 1, paragraph 9, lines 8-15).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to observe that if the method disclosed by Songer displays images that can be viewed in either two or three dimensions depending on whether or not you're wearing a pair of glasses, that the buffering of the 3D frames described in Hochmuth would also be buffering the 2D frames.

Claims 8-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith as applied to the claims above, and further in view of Krasnoperov.

Referring to claim 8, Songer, McLaine and Smith do not disclose a method of claim 1, wherein said left image sub-flame comprises a first group of colors and said right image sub-frame comprises a second group of colors distinct from said first group of colors.

In an analogous art, Krasnoperov teaches a method of claim 1, wherein said left image sub-flame comprises a first group of colors and said right image sub-frame comprises a second group of colors distinct from said first group of colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the system previously disclosed. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 9, Songer discloses a method of claim 8, wherein said 2D image frame comprises one or more of said colors in said first and second groups of colors (Abstract: lines 20-23).

Referring to claim 10, Songer, McLaine and Smith do not disclose a method of claim 8, wherein said first group of colors comprises two or more colors and said second group of colors comprises two or more colors.

In an analogous art, Krasnoperov teaches a method of claim 8, wherein said first group of colors comprises two or more colors and said second group of colors comprises two or more colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the system previously disclosed. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 11, the references used to reject the claim refer to 3D displays using different color combinations to create the display seen by the user. The references do not explicitly teach a method wherein the first group of colors comprises RGB and the second group of colors comprises CYM; and as it is well known in the art

to use both RGB and CYM color groupings to display images on electronic displays the claims are rejected using the KSR ruling of the Supreme Court.

Thus it would have been obvious to one having ordinary skill in the art to use the RGB color grouping for the first group of colors, and the CYM color grouping for the second group of colors. As all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Referring to claim 15, Songer discloses a method of claim 8, further comprising generating said colors in said first and second groups of colors with a diffractive light device (figure 4, part 72; Note: the definition of a diffractive light device is "a device to change the direction and intensity of a group of waves after passing by an obstacle or through an aperture.").

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith in view of Krasnoperov as applied to claim 8 above, and further in view of Divelbiss.

Referring to claim 12, Songer, McLaine, Smith and Krasnoperov do not disclose a method of claim 8, further comprising generating said colors in said first and second groups of colors with a sequential color device.

In an analogous art, Divelbiss teaches a method of claim 8, further comprising generating said colors in said first and second groups of colors with a sequential color device (figure 39, Color Wheel).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the sequential color device disclosed in Divelbiss. The motivation for doing this would have been to allow for the use of a grayscale CRT monitor instead of a color CRT.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine Smith in view of Krasnoperov as applied to claim 8 above, and further in view of Anderson.

Referring to claim 13, Songer, McLaine, Smith, and Krasnoperov do not disclose a method of claim 8, further comprising generating said colors in said first and second group of colors with a scrolling color device.

In an analogous art, Anderson teaches a method of claim 8, further comprising generating said colors in said first and second group of colors with a scrolling color device (section 1, lines 1-3).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the scrolling color device disclosed in Anderson. The motivation for doing this would have been to allow the designer to adjust the relative optical powers of the primary colors by changing the stripe heights of the primary colors (page 1, section 1, lines 10-11).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith in view of Krasnoperov in further view of Sato (An author of a SPIE article titled "New Type Electo-Holographic Display System Using LCDs").

Referring to claim 14, Songer, McLaine, Smith, and Krasnoperov do not disclose a method of claim 8, further comprising generating said colors in said first and second groups of colors with a parallel color device.

In an analogous art, Sato teaches a method of claim 8, further comprising generating said colors in said first and second groups of colors with a parallel color device (abstract, paragraph 2, lines 1-4).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the parallel color device disclosed in Sato. The motivation for doing this would have been to make the system more compact (abstract, line 8).

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith in view of Krasnoperov as applied to claim 15 above, and further in view of Bolas.

Referring to claims 16 and 17, Songer, McLaine, Smith and Krasnoperov do not disclose a method of claim 15, further comprising notch filtering light incident upon said

diffractive light device; and further comprising notch filtering light reflecting from said diffractive light device.

Bolas discloses a method of claim 15, further comprising notch filtering light incident upon said diffractive light device; and further comprising notch filtering light reflecting from said diffractive light device (page 19, section "Optical filtering," paragraph 2, lines 2-8).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to use the notch filters from Bolas in conjunction with the diffractive light device from Songer, McLaine, Smith and Krasnoperov. The motivation for doing this would have been to restrict the device to specific wavelengths of light.

Claims 19-26, 48, 49, 53, 55, 56, 58, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Divelbiss in view of Krasnoperov.

Referring to claim 19, Divelbiss discloses a method of displaying an image in three dimensions during a frame period, said method comprising: generating a left image sub-frame and a right image sub-frame, said left image sub-frame defining a visual perspective of a left eye and said right image sub-frame defining a visual perspective of a right eye for said image (page 11, paragraph 177); displaying said left image sub-frame with said display system, wherein said electronic (figure 43 shows an electronic system) display system outputs a display of said left image sub-frame (figure 43) utilizing a first plurality of colors; and displaying said right image sub-frame with said

display system, wherein said display system outputs a display of said right image sub-frame (figure 43) utilizing a second plurality of colors.

Divelbiss does not disclose a method wherein said first plurality of colors is distinct from said second plurality of colors.

In an analogous art, Krasnoperov teaches a method wherein said first plurality of colors is distinct from said second plurality of colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 20, Divelbiss does not disclose a method of claim 19, wherein said first plurality of colors and said second plurality of colors comprise different sets of primary colors.

In an analogous art, Krasnoperov teaches a method of claim 19, wherein said first plurality of colors and said second plurality of colors comprise different sets of primary colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 21, Divelbiss discloses a method of claim 19, further comprising: dividing said frame period into a plurality of sub-frame time periods

including at least one left sub-frame time period and one right sub-frame time period; displaying said left image sub-frame during said at least one left sub- frame time period; and displaying said right sub-frame image during said at least one right image sub-frame time period (page 11, paragraph 177).

Referring to claim 22, Divelbiss discloses a method of claim 19, wherein said left image sub-frame is displayed during a first portion of said frame period and said right image sub-frame is displayed during a second portion of said frame period, wherein said first portion and said second portion are overlapping (page 11, paragraph 181).

Referring to claim 23, Divelbiss does not disclose a method of claim 19, wherein said first plurality of colors includes red, green, and blue.

In an analogous art, Krasnoperov teaches a method of claim 19, wherein said first plurality of colors includes red, green, and blue (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 24, Divelbiss does not disclose a method of claim 25, wherein said second plurality of colors includes red, green, and blue.

In an analogous art, Krasnoperov teaches a method of claim 19, wherein said second plurality of colors includes red, green, and blue (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 25, the references used to reject the claim refer to 3D displays using different color combinations to create the display seen by the user. The references do not explicitly teach a method wherein the first group of colors comprises CYM; and as it is well known in the art to use both RGB and CYM color groupings to display images on electronic displays the claims are rejected using the KSR ruling of the Supreme Court.

Thus it would have been obvious to one having ordinary skill in the art to use the RGB color grouping for the first group of colors. As all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Referring to claim 26, the references used to reject the claim refer to 3D displays using different color combinations to create the display seen by the user. The references do not explicitly teach a method wherein the second group of colors comprises CYM; and as it is well known in the art to use both RGB and CYM color

groupings to display images on electronic displays the claims are rejected using the KSR ruling of the Supreme Court.

Thus it would have been obvious to one having ordinary skill in the art to use the CYM color grouping for the second group of colors. As all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Referring to claim 48, Divelbiss discloses a device, comprising: an image processing unit configured to generate image sub-frame data; and a color modulator electronically coupled (figure 13) to said image processing unit configured to generate a plurality of image sub-frames based on said image sub-frame data (page 11, paragraph 177); wherein said color modulator generates a first plurality of colors to output at least one image sub-frame of said plurality of image sub-frames and a second plurality of colors (page 18, paragraph 222, lines 1-7, 14-20), for at least one other image sub-frame of said plurality of image sub-frames.

Divelbiss does not disclose a device, wherein the first set and second set of colors are distinct.

In an analogous art, Krasnoperov teaches a device, wherein the first set and second set of colors are distinct (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 49, Divelbiss does not disclose a device of claim 48, wherein said first plurality of colors and said second plurality of colors comprise different sets of primary colors.

In an analogous art, Krasnoperov teaches a device of claim 48, wherein said first plurality of colors and said second plurality of colors comprise different sets of primary colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 53, Divelbiss discloses a 3D imaging device of claim 48, further comprising: at least one set of lenses having a first and second lens wherein said first lens filters out said first plurality of colors and said second lens filters out said second plurality of colors (paragraph 222, lines 14-20).

Referring to claim 55, Divelbiss discloses a device of claim 48, wherein said color modulator displays said at least one image sub-frame and said at least one other image sub-frame at the same time during one frame period (page 11, paragraph 179).

Referring to claim 56, Divelbiss discloses a device of claim 48, wherein said color modulator includes an array of pixels and is configured to display said at least one image sub-frame and said at least one other image sub-frame in alternating adjacent pixels during at least a portion of one frame period (page 11, paragraph 181).

Referring to claim 58, Divelbiss does not disclose a 3D imaging device of claim 57, wherein said 2D image frame including said first set primary colors and said second set of primary colors.

In an analogous art, Krasnoperov teaches a 3D imaging device of claim 57, wherein said 2D image frame including said first set primary colors and said second set of primary colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 66, Divelbiss discloses a system for displaying an image in three dimensions during a frame period, said system comprising: means for generating a left image sub-frame and a right image sub- frame, said left image sub-frame defining a visual perspective of a left eye and said right image sub-frame defining a visual perspective of a right eye for said image (page 11, paragraph 177); means for electronically (figure 13) displaying said left image sub-frame utilizing a first plurality of

colors to compose the display of the left image sub-frame; and means for electronically (figure 13) displaying said right image sub-frame utilizing a second plurality of colors to compose the display of the right image sub-frame (page 18, paragraph 222, lines 1-7, 14-20).

Divelbiss does not disclose a system wherein said first plurality of colors is distinct from said second plurality of colors.

In an analogous art, Krasnoperov teaches a system wherein said first plurality of colors is distinct from said second plurality of colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Claims 27-30, 33-35, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine.

Referring to claim 27, Songer discloses a system with a selectable mode of operation for displaying an image frame in three dimensions (3D) or in two dimensions (2D), said system comprising: a spatial light modulator; and an image processing unit configured to control said spatial light modulator (column 5, lines 59-62); wherein if said selected mode of operation is said 3D mode of operation, said spatial light modulator generates a left image sub-frame carrying a left eye perspective and a right image sub-frame carrying a right eye perspective during a frame period (abstract, lines 20-21) and if said selected mode of operation is said 2D mode of operation, said spatial light

modulator generates a 2D image frame to be displayed on said viewing surface during said frame period (abstract, lines 22-23).

Songer does not disclose a system for selecting between a 2D mode of operation and a separate 3D mode of operation; and including a projection display for a 2D/3D projection system.

In an analogous art, McLaine teaches a system for selecting between a 2D mode of operation and a separate 3D mode of operation (column 8, lines 63-66).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D mode switch taught by McLaine to the system disclosed by Songer. The motivation would have been to allow the user to simply switch between the two modes, thereby increasing the system's usability (McLaine: column 8, lines 63-66).

Referring to claims 28 and 29, Songer discloses a system of claim 27, wherein said image processing unit comprises: a 3D coordinate conversion function configured to generate left and right image sub-frame data defining said left and right image sub-frames; wherein said spatial light modulator is configured to generate said left and right image sub-frames in accordance with said left and right image sub- frame data (figure 12); and where the image processing unit further comprises: a 2D coordinate conversion function configured to generate 2D image frame data defining said 2D image frame; wherein said spatial light modulator is further configured to generate said 2D image frame in accordance with said 2D image frame data (figure 12; Note: as the

same frames used for the 3D image as are used for the 2D image, therefore any coordinate conversion performed on the 3D image would be performed on the 2D image).

Referring to claims 33 and 34, Songer discloses a system of claim 27, wherein said frame period comprises a first sub-frame period and a second sub-frame period, said left image sub- frame being displayed during said first sub-frame period and said right image sub-frame being displayed during said second sub-frame period (column 9, lines 59-65); and where the frame period comprises a number of sub-frame periods, wherein said left and right image sub-frames are each displayed during one or more of said sub-frame periods in an interleaved manner (column 10, lines 6-11).

Referring to claim 35, Songer discloses a system of claim 27, further comprising glasses, said glasses comprising: a left lens configured to allow a left eye of a user of said glasses to only perceive said left image sub-frame; and a right lens configured to allow a right eye of a user of said glasses to only perceive said right image sub-frame (column 5, lines 63-64; column 6, lines 30-35).

Referring to claim 45, Songer does not disclose a system of claim 27, wherein said mode of operation is selected by a user of said display system.

In an analogous art, McLaine teaches a system of claim 27, wherein said mode of operation is selected by a user of said display system (column 8, lines 63-66).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D mode switch taught by McLaine to the system disclosed by Songer. The motivation would have been to allow the user to simply switch between the two modes, thereby increasing the system's usability (McLaine: column 8, lines 63-66).

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine as applied to claim 29 above, and further in view of Stuettler.

Referring to claim 30, Songer and McLaine do not disclose a system of claim 29, further comprising: a first buffer for storing said left image sub-frame data to be used by said spatial light modulator to generate said left image sub-frame; a second buffer for storing said right image sub-frame data to be used by said spatial light modulator to generate said right image sub-frame; and a third buffer for storing said 2D image frame data to be used by said spatial light modulator to generate said 2D image frame.

In an analogous art, Stuettler teaches a system of claim 29, further comprising: a first buffer for storing said left image sub-frame data to be used by said spatial light modulator to generate said left image sub-frame; a second buffer for storing said right image sub-frame data to be used by said spatial light modulator to generate said right image sub-frame (column 2, lines 52-56; figure 4, parts 8a); and a third buffer for storing said 2D image frame data to be used by said spatial light modulator to generate said 2D image frame (Note: as the 2D image is made up of both frames used in the 3D image, both buffers in combination are being interpreted as the third 2D buffer).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to add the buffers from Stuettler to the method disclosed by Songer and McLaine. The motivation for doing this would have been to allow for the display output to be synced up with the shutter glasses by controlling the outputs of the buffer.

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Stuettler as applied to claim 30 above, and further in view of Hochmuth.

Referring to claims 31 and 32, Songer and Stuettler do not disclose a system of claim 30, wherein a single buffer unit comprises said first, second, and third buffers; and a single buffer unit comprises said first and second buffers.

Hochmuth discloses a system of claim 30, wherein a single buffer unit comprises said first, second, and third buffers (page 1, paragraph 9, lines 8-15); and a single buffer unit comprises said first and second buffers (Note: as claim was interpreted above, the two buffers used in the 3D mode are both used as the buffers in the 2D mode, therefore the combination of the two buffers used in the 3D mode would be the same as the all three buffers being combined as disclosed in claim 31).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the three buffers disclosed in Stuettler with the single buffer from Hochmuth. The motivation for doing this would have been to reduce the amount of control circuitry by only needing to control a single buffer unit.

Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine as applied to claim 27 above, and further in view of Krasnoperov.

Referring to claim 36, Songer and McLaine do not disclose a system of claim 27, wherein said left image sub-frame comprises a first group of colors and said right image sub-frame comprises a second group of colors distinct from said first group of colors.

In an analogous art, Krasnoperov teaches a system of claim 27, wherein said left image sub-frame comprises a first group of colors and said right image sub-frame comprises a second group of colors distinct from said first group of colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 37, Songer discloses a method of claim 36, wherein said 2D image frame comprises one or more of said colors in said first and second groups of colors (Abstract: lines 20-23).

Referring to claim 38, Songer does not disclose a system of claim 36, wherein said first group of colors comprises two or more colors and said second group of colors comprises two or more colors.

In an analogous art, Krasnoperov teaches a system of claim 36, wherein said first group of colors comprises two or more colors and said second group of colors comprises two or more colors (column 2, lines 57-60).

At the time of the invention it would have been obvious for one of ordinary skill of art to add the color grouping taught by Krasnoperov to the disclosed by Divelbiss. The motivation would have been to use more colors to provide a more detailed image.

Referring to claim 42, Songer discloses a method of claim 36, further comprising generating said colors in said first and second groups of colors with a diffractive light device (figure 4, part 72; Note: the definition of a diffractive light device is "a device to change the direction and intensity of a group of waves after passing by an obstacle or through an aperture.").

Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Krasnoperov as applied to claim 36 above, and further in view of Divelbiss.

Referring to claim 39, Songer, McLaine, Smith and Krasnoperov do not disclose a method of claim 36, further comprising generating said colors in said first and second groups of colors with a sequential color device.

In an analogous art, Divelbiss teaches a method of claim 8, further comprising generating said colors in said first and second groups of colors with a sequential color device (figure 39, Color Wheel).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the sequential color device disclosed in Divelbiss. The motivation for doing this would have been to allow for the use of a grayscale CRT monitor instead of a color CRT.

Claim 40 is rejected on the same grounds as claim 39.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Krasnoperov as applied to claim 36 above, and further in view of Sato.

Referring to claim 41, Songer, McLaine, and Krasnoperov do not disclose a method of claim 36, further comprising generating said colors in said first and second groups of colors with a parallel color device.

In an analogous art, Sato teaches a method of claim 36, further comprising generating said colors in said first and second groups of colors with a parallel color device (abstract, paragraph 2, lines 1-4).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the parallel color device disclosed in Sato. The motivation for doing this would have been to make the system more compact (abstract, line 8).

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Krasnoperov as applied to claim 42 above, and further in view of Bolas.

Referring to claims 43 and 44, Songer, McLaine and Krasnoperov do not disclose a method of claim 15, further comprising notch filtering light incident upon said diffractive light device; and further comprising notch filtering light reflecting from said diffractive light device.

Bolas discloses a method of claim 15, further comprising notch filtering light incident upon said diffractive light device; and further comprising notch filtering light reflecting from said diffractive light device (page 19, section "Optical filtering," paragraph 2, lines 2-8).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to use the notch filters from Bolas in conjunction with the diffractive light device from Songer, McLaine, and Krasnoperov. The motivation for doing this would have been to restrict the device to specific wavelengths of light.

Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine as applied to claim 27 above, and further in view of Anderson.

Referring to claim 47, Songer discloses a system of claim 27; wherein said spatial light modulator is selected from the group consisting of an analog based light modulator (column 5, lines 59-62).

Songer and McLaine do not disclose a system of claim 27, wherein said spatial light modulator is selected from the group consisting of a pulse- width modulation based light modulator, a liquid crystal display (LCD) panel, a liquid crystal on silicon (LCOS) device, a diffractive light device (DLD), and an array of micro-mirrors.

Anderson discloses a system of claim 27, wherein said spatial light modulator is selected from the group consisting of a liquid crystal on silicon (LCOS) device (page 1, section 1, lines 1-3).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to replace the display system disclosed in Songer with the scrolling color device disclosed in Anderson. The motivation for doing this would have been to allow the designer to adjust the relative optical powers of the primary colors by changing the stripe heights of the primary colors (page 1, section 1, lines 10-11).

Claims 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Divelbiss in view of Krasnoperov as applied to claim 48 above, and further in view of Stuettler.

Referring to claims 50 and 54, Divelbiss does not disclose a device of claim 48, further comprising one or more image sub-frame buffers for storing said image sub-frame data generated by said image processing unit; and displays said at least one image sub-frame and said at least one other image sub-frame buffer during one frame period.

In an analogous art, Stuettler teaches a device of claim 48, further comprising one or more image sub-frame buffers for storing said image sub-frame data generated by said image processing unit; and displays said at least one image sub-frame and said at least one other image sub-frame buffer during one frame period (column 2, lines 52-56; figure 4, parts 8a).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to add the buffers from Stuettler to the method disclosed by Divelbiss and Krasnoperov. The motivation for doing this would have been to allow for the display output to be synced up with the shutter glasses by controlling the outputs of the buffer.

Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Divelbiss in view of Krasnoperov as applied to claim 48 above, and further in view of Bolas.

Referring to claims 51 and 52, Divelbiss does not disclose a device of claim 48, further comprising: a light source for illuminating said color modulator; and at least one notch filter disposed between said light source and said color modulator; and at least one notch filter disposed between said color modulator and a viewing surface.

Bolas discloses a device of claim 48, further comprising: a light source for illuminating said color modulator; and at least one notch filter disposed between said light source and said color modulator; and at least one notch filter disposed between said color modulator and a viewing surface (page 19, section "Optical filtering," paragraph 2, lines 2-8).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to use the notch filters from Bolas in conjunction with the projector system from Divelbiss and Krasnoperov. The motivation for doing this would have been to restrict the device to specific wavelengths of light.

Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Divelbiss in view of Krasnoperov as applied to claim 48 above, and further in view of Songer.

Referring to claim 57, Divelbiss and Krasnoperov do not disclose a device of claim 48, wherein said imaging processing unit is further configured to generate 2D image frame data, wherein said color modulator generates a 2D image frame based on said 2D image frame data.

Songer discloses a device of claim 48, wherein said imaging processing unit is further configured to generate 2D image frame data, wherein said color modulator generates a 2D image frame based on said 2D image frame data (column 6, lines 30-35).

At the time of the invention if would have been obvious to a person of ordinary skill in the art to add the 2D method from Songer into the display disclosed by Divelbiss. The motivation for doing this would have been to add the ability to display 2D images on the same display and the same time as 3D images are being displayed.

Claims 61, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of Smith in view of Taniguchi.

Referring to claim 61, Songer discloses a system for displaying an image frame in three dimensions (3D) or in two dimensions (2D) with a single light engine (column 5, lines 59-62), said system comprising: means for selecting between a 2D mode of operation and a 3D mode of operation (column 6, lines 30-35); means for generating a left image sub-frame and a right image sub- frame if said 3D mode of operation is selected; and means for generating a 2D image frame if said 2D mode of operation is selected; wherein said left and right image sub-frames are left and right perspectives during a frame period if said 3D mode of operation (column 5, lines 48-50) is selected and said 2D image frame is displayed during said frame period if said 2D mode of operation is selected.

Songer does not disclose a system for selecting between a 2D mode of operation and a separate 3D mode of operation; and including a projection display for a 2D/3D projection system; and where said 2D image frame does not comprise sub-frames having different perspectives.

In an analogous art, McLaine teaches a system for selecting between a 2D mode of operation and a separate 3D mode of operation (column 8, lines 63-66).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D mode switch taught by McLaine to the system disclosed by Songer. The motivation would have been to allow the user to simply switch between

the two modes, thereby increasing the system's usability (McLaine: column 8, lines 63-66).

Songer and McLaine do not disclose a system including a projection display for a 2D/3D projection system; and where said 2D image frame does not comprise sub-frames having different perspectives.

In an analogous art, Smith teaches a system including a projection display for a 2D/3D projection system (paragraph 26).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the 2D/3D projector taught by Smith to the system disclosed by Songer and McLaine. The motivation would have been to allow the system to display a large image size cheaper than with a CRT or LCD display.

Songer, McLaine, and Smith do not disclose a system where said 2D image frame does not comprise sub-frames having different perspectives.

In an analogous art, Taniguchi teaches a system where said 2D image frame does not comprise sub-frames having different perspectives (paragraph 81, lines 1-2; paragraph 82, lines 6-11).

At the time of the invention it would have been obvious for one of ordinary skill in the art to have a 2D display mode where the 2D image is not made from 2 sub-frames as taught by Taniguchi, in the system disclosed by Songer and Smith. The motivation for doing this would be when the 2D image is coming from a 2D imaging device such as a normal camera (Taniguchi: paragraph 82, lines 1-3).

Referring to claim 64, Songer discloses a system of claim 61, further comprising: means for dividing said frame period into a first sub-frame period and a second sub-frame period; means for displaying said left image sub-frame during said first sub-frame period; and means for displaying said right image sub-frame during said second sub-frame period (column 9, lines 59-65; figure 15).

Referring to claim 65, Songer discloses a system of claim 61, further comprising: means for dividing said frame period into a number of sub-frame periods; means for displaying said left image sub-frame during one or more of said sub-frame periods; and means for displaying said right image sub-frame during one or more of said sub-frame periods; wherein said left and right image sub-frames are displayed in an interleaved manner (column 10, lines 6-10; figure 16).

Claims 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith in view of Taniguchi as applied to claim 61 above, and further in view of Stuettler.

Referring to claims 62 and 63, Songer discloses a system of claim 61, wherein said means for generating said left and right image sub-frames comprises: means for generating left and right image sub-frame data defining said left and right image sub-frames.

Songer, McLaine, Smith and Taniguchi do not disclose a means for storing said left image sub-frame data in a first buffer; means for storing said right image sub-frame

data in a second buffer; and means for controlling a spatial light modulator with said left and right image sub-frame data in said first and second buffers to generate said left and right image sub-frames; and a means for generating said 2D image frame comprises: means for generating 2D image frame data defining said 2D image frame; means for storing said 2D image frame data in a buffer; and means for controlling a spatial light modulator with said 2D image frame data in said buffer to generate said 2D image frame.

Stuettler discloses a means for storing said left image sub-frame data in a first buffer; means for storing said right image sub-frame data in a second buffer; and means for controlling a spatial light modulator with said left and right image sub-frame data in said first and second buffers to generate said left and right image sub-frames; and a means for generating said 2D image frame comprises: means for generating 2D image frame data defining said 2D image frame; means for storing said 2D image frame data in a buffer; and means for controlling a spatial light modulator with said 2D image frame data in said buffer to generate said 2D image frame (column 2, lines 52-56; figure 4, parts 8a).

At the time of the invention if would have been obvious to a person or ordinary skill in the art to add the buffers from Stuettler to the method disclosed by Songer. The motivation for doing this would have been to allow for the display output to be synced up with the shutter glasses by controlling the outputs of the buffer.

At the time of the invention if would have been obvious to a person or ordinary skill in the art to observe that if the method disclosed by Songer displays images that

can be viewed in either two or three dimensions depending on whether or not you're wearing a pair of glasses, that the buffering of the 3D frames described in Stuettler would also be buffering the 2D frames.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Songer in view of McLaine in view of Smith as applied to claim 1 above, and further in view of Taniguchi.

Referring to claim 67, Songer, McLaine, and Smith do not disclose a method of claim 1, wherein generating said left and right image sub-frames and said 2D image frame comprises: storing said left and right image sub-frames in a first buffer; and storing said 2D image frame data in a second buffer; and controlling a spatial light modulator with data from either said first or second buffer depending on the selected mode of operation.

In an analogous art, Taniguchi teaches a method of claim 1, wherein generating said left and right image sub-frames and said 2D image frame comprises: storing said left and right image sub-frames in a first buffer (paragraph 93, lines 3-8); and storing said 2D image frame data in a second buffer (paragraph 82, lines 12-14); and controlling a spatial light modulator with data from either said first or second buffer depending on the selected mode of operation (paragraph 82, lines 6-11).

At the time of the invention it would have been obvious for one of ordinary skill in the art to use one buffer for 2D and another for 3D images as taught by Taniguchi in the system disclosed by Songer, McLaine, and Smith. The motivation for doing this would

have been to easily switch between 2D and 3D displaying modes as the modes would use separate memories (Taniguchi: paragraph 81, lines 1-2).

(10) Response to Argument

Page 15, paragraph beginning with "In contrast":

The appellant states that Songer does not teach a device that can select between a 2D and a 3D mode. The examiner agrees with this, although Songer does teach a device capable of 2D and 3D displays (column 6, lines 30-35).

Page 16, paragraph beginning with "Thus, McLaine":

The appellant argues that as McLaine teaches a system wherein the 3D image is always broadcast, but the viewer must pay more for the 3D content than the 2D content and can activate the 3D mode (figure 8, part 890), that this does not meet the limitation of selecting between the modes. The examiner argues that as the user must make an effort (i.e. paying more and switching a switch) that this constitutes selecting one mode over the other. Also, there is nothing in the claim about only broadcasting one mode over the other, only selecting one for projection.

If the appellant is arguing that the "generating" limitation found in the claim refers to the recording and broadcasting of the signal. A broad interpretation of this limitation is that the generating step is taking the received signal and converting it to be projected as is done in an ordinary television. Therefore when McLaine operates in a 2D mode, it only receives the right hand side image as the user has not paid for the 3D content, and

only a 2D image is generated on the television (figure 8, part 870). If the 3D mode is paid for, then the receiver (figure 8, part 870) will receive both the left and right signals and generate a 3D image for the viewer.

Page 16, paragraph beginning with "Thus, the combination":

The appellant argues that the combination of Songer and McLaine would not result in the claimed invention as the 3D image would always be created and broadcast. But as answered above, as the receiver only receives either the right or both the right and left images depending on what mode the user pays for. This is interpreted as meeting the limitation as only a 2D or 3D image is generated depending on what mode the user pays for.

Page 16, paragraph beginning with "Additionally":

The appellant argues that Smith does not fix the deficiencies of Songer and McLaine, but as it has been shown that there are no deficiencies in the cited art, this argument is moot.

Page 16, last paragraph:

The appellant again argues that as the left and right (and therefore 2D and 3D) images are always recorded and broadcasted, that this does not meet the limitation of generating either a 2D or a 3D image depending on the mode. The examiner does not agree, as a broad interpretation of generating an image could be receiving a signal and

displaying the image on a screen. Using this interpretation, McLaine only generates either a 2D or a 3D image depending on the mode paid for. Referring to the appellant's figure 4, the difference between the invention and the claimed prior art is that there is a pathway for the 3D (including left and right images) and 2D images wherein McLaine teaches using either a right image or both in the receiver (figure 8, parts 860 and 890). As this difference is not found in the claims, the claims stand rejected by the cited prior art.

Page 17, paragraph beginning with "Under":

The appellant argues that the prior art must contain all limitations found in the claims. As has been shown above, the prior art teaches the limitations and therefore the argument is moot.

Page 17, paragraph beginning with "Moreover":

The appellant argues that the prior art must contain all limitations found in the claims. As has been shown above, the prior art teaches the limitations and therefore the argument is moot.

Page 17, section 2:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

Page 17, section 3:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

Page 18, section 4:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

Page 18, section 5:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

Page 18, section 6:

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue. These are interpreted as two groups of colors. The appellant states that more detailed

arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 18, last paragraph:

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue. These are interpreted as two groups of colors. The appellant states that more detailed arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 19, paragraph beginning with "Claim 15":

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue. These are interpreted as two groups of colors. The appellant states that more detailed arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 19, section 7:

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue. These are interpreted as two groups of colors. The appellant states that more detailed arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 19, section 8:

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue. These are interpreted as two groups of colors. The appellant states that more detailed arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 20, section 9:

The appellant argues that Krasnoperov does not teach two groups of colors, that the limitations have not been met. Krasnoperov teaches that a 3D device may use yellow and cyan (column 2, lines 57-60) and that these colors are made up of multiple colors. Yellow is made up of green and red and cyan is made up of green and blue.

These are interpreted as two groups of colors. The appellant states that more detailed arguments will be made relating to claim 19. These detailed arguments will be addressed when they are presented.

Page 20, section 10:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

Page 21, first paragraph:

The appellant describes claim 19.

Page 21, paragraph beginning with "In contrast":

The appellant, and the examiner agrees, that Divelbiss teaches displaying a left and right image using the same set of primary colors.

Page 21, paragraph beginning with "Consequently, Divelbiss":

The appellant, and the examiner agrees, that Divelbiss teaches displaying a left and right image using the same set of primary colors.

Page 21, last 2 paragraphs continuing to the first 2 full paragraphs on page 22:

The appellant argues that Krasnoperov does not teach displaying an image in 3D using two different sets colors. Krasnoperov teaches a device wherein the 3D display is displayed using yellow and cyan (column 2, lines 57-60). The reference states that yellow is made up of green and red while cyan is made up of green and blue. Now the argument is centered on the idea that while the 3D image is created using two sets of colors, these sets are not different as they both include the color green. Not using colors, but instead numbers. Lets say you have two sets of numbers, one set includes 1 and 2 while the other includes 2 and 3. One would not argue that the sets are not different (or distinct) as they are not the same. If one were to argue that the sets are mutually exclusive, then this would be incorrect. As the claim does not point out that the one set does not include any colors found in the other set, the sets of colors are considered distinct.

Page 22, last paragraph:

The appellant continues to argue that as the cited references do not contain the same advantages as found in the specification, that the limitations cannot be considered met. As the advantages refer to the sets of colors being mutually exclusive and not just distinct (the difference noted above), this argument is moot.

Page 23, last paragraph:

The appellant argues that Krasnoperov does not teach displaying an image in 3D using two different sets colors. Krasnoperov teaches a device wherein the 3D display is

displayed using yellow and cyan (column 2, lines 57-60). The reference states that yellow is made up of green and red while cyan is made up of green and blue. Now the argument is centered on the idea that while the 3D image is created using two sets of colors, these sets are not different as they both include the color green. Not using colors, but instead numbers. Lets say you have two sets of numbers, one set includes 1 and 2 while the other includes 2 and 3. One would not argue that the sets are not different (or distinct) as they are not the same. If one were to argue that the sets are mutually exclusive, then this would be incorrect. As the claim does not point out that the one set does not include any colors found in the other set, the sets of colors are considered distinct.

Page 24, paragraph beginning with "As before":

The appellant argues that as the references do not teach all the limitations, that the rejection is not valid. As the appellant is arguing a limitation not found in the claim, i.e. the sets of colors being mutually exclusive and not just distinct, the argument is moot.

Page 24, last paragraph:

The appellant argues that as the references do not teach all the limitations, that the rejection is not valid. As the appellant is arguing a limitation not found in the claim, i.e. the sets of colors being mutually exclusive and not just distinct, the argument is moot.

Page 25, last 2 paragraphs:

The appellant that as both sets of colors taught by Krasnoperov fall under the RGB spectrum, that the rejection is not valid. As has been shown above, while both sets are made up of the RGB spectrum, they are in fact distinct.

Page 26, paragraph beginning with "In contrast":

The appellant argues that Songer does not teach a "spatial light modulator." Songer teaches a television, movie screen, or equivalent to display 2D and 3D images (column 5, lines 59-62). In the appellant's specification (page 5, paragraph 25), a spatial light modulator or SLM is defined as a device that modulates incident light in a spatial pattern corresponding to an electrical or optical output. It is the interpretation of the examiner that the television (or movie screen) meets the limitation of an SLM as defined in the specification.

Page 26, last paragraph:

The appellant argues that Songer does not teach a device for switching between 2D and 3D modes. As McLaine is used to teach this limitation (last office action, page 21), this argument is moot.

The appellant also argues that Songer does not contain an image processing unit for controlling the SLM. Songer teaches that the television includes a receiving means and a converting means, wherein the converting means converts the image signal to the

plurality of left eye images and right eye images for displaying on the viewing device. This converting means is being interpreted as a simple image processor.

Page 27, last paragraph:

The appellant argues that McLaine does not teach an image processing unit configured to control said spatial light modulator in a selected mode of operation which is either a 3D mode of operation or a 2D mode. As has been shown above, McLaine does teach a system for switching between a 2D and 3D mode. And while McLaine is not used for meeting the SLM limitation and therefore the argument is moot, figure 8 does show a television which has been argued as meeting the limitation as defined in the specification. Therefore the limitations are considered met.

The appellant also argues that McLaine does not teach an image processor. And while McLaine is not used for meeting the image processor limitation and therefore the argument is moot, figure 8 does show a right decoder and an image information decoder, which are interpreted as an image processor. Therefore the limitations are considered met.

Page 28, first 2 paragraphs:

The appellant again argues that neither Songer or McLaine teach an image processing unit configured to control said spatial light modulator in a selected mode of operation which is either a 3D mode of operation or a 2D mode. As has been shown above, Songer does teach an image processor and an SLM and McLaine teaches

selecting between a 2D and 3D mode. Therefore the limitations found in the claim have been met.

Page 28, last paragraph:

The appellant argues that as the limitation of an image processor has not been met in the previous independent claim and is therefore allowable, that the dependent claims should also be allowed. As this limitation has been pointed out as met above, this argument is moot.

Page 29, first paragraph:

The appellant argues that as the limitation of an image processor has not been met in the previous independent claim and is therefore allowable, that the dependent claims should also be allowed. As this limitation has been pointed out as met above, this argument is moot.

Page 29, section 13:

The appellant argues that as the limitation of an image processor has not been met in the previous independent claim and is therefore allowable, that the dependent claims should also be allowed. As this limitation has been pointed out as met above, this argument is moot.

Page 29, section 14:

The appellant argues that as the limitation of an image processor has not been met in the previous independent claim and is therefore allowable, that the dependent claims should also be allowed. As this limitation has been pointed out as met above, this argument is moot.

Page 29, section 15:

The appellant argues that as claim 19 has been shown to be allowable, the claims with related subject matter should also be allowed. As claim the limitations in claim 19 were shown to have been met, this argument is moot.

Page 30, section 16:

The appellant argues that as claim 19 has been shown to be allowable, the claims with related subject matter should also be allowed. As claim the limitations in claim 19 were shown to have been met, this argument is moot.

Page 30, section 17:

The appellant argues that as claim 19 has been shown to be allowable, the claims with related subject matter should also be allowed. As claim the limitations in claim 19 were shown to have been met, this argument is moot.

Page 30, section 18:

The appellant argues that as claim 27 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 27 would be rejected over the cited prior art, this argument is moot.

Page 30, section 19:

The appellant argues that as claim 27 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 27 would be rejected over the cited prior art, this argument is moot.

Page 31, section 20:

The appellant argues that as claim 48 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 48 would be rejected over the cited prior art, this argument is moot.

Page 31, section 21:

The appellant argues that as claim 48 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 48 would be rejected over the cited prior art, this argument is moot.

Page 31, section 22:

The appellant argues that as claim 48 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 48 would be rejected over the cited prior art, this argument is moot.

Page 32, first 2 paragraphs:

The appellant argues that Songer/Smith do not use the same principals and therefore cannot be combined. While this may be the case, the types of displays are not being combined. The only portion of Taniguchi being cited is a portion stating that the 3D image is captured by a normal 2D camera and then converted into a 3D image by performing a conversion to create a left and right image. Therefore the 2D image is not comprised of sub-frames having different perspectives. One of ordinary skill in the art at the time of the invention, would have seen that Songer could have used this type of image setup when paired with McLaine (figure 8). As shown in McLaine (a combination that the appellant has not disputed), the 2D image is only made up of a single image. One could use the 2D to 3D transformation instead of the dual camera system used by McLaine, which would result in the claimed invention.

Page 32, paragraph beginning with "In contrast":

The appellant is arguing a section of Taniguchi that refers to the prior art and not to the portion of Taniguchi cited by the examiner. Therefore this argument is moot.

Page 32, paragraph beginning with "Accordingly":

The appellant argues that it is never stated how these references would be combined. This has been provided above without adding any new art or citations from the references.

Page 32, last paragraph:

The appellant argues that there is no motivation for combining the references. The examiner provided one in the office action and has given a detailed description of how the references could be combined.

Page 33, paragraph beginning with "Applicant":

The appellant argues that the references cannot teach away from each other. As it has been shown above, the references do not teach away from each other.

Page 34, section 24:

The appellant argues that as claim 61 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 61 would be rejected over the cited prior art, this argument is moot.

Page 30, section 25:

The appellant argues that as claim 1 has been shown to be allowable, as would it's dependent claims. As it has been shown above that claim 1 would be rejected over the cited prior art, this argument is moot.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Justin Shepard

/Justin E Shepard/

Examiner, Art Unit 2424

6/3/09

Conferees:

Chris Kelley

/Christopher Kelley/

Supervisory Patent Examiner, Art Unit 2424

Joseph Ustaris

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Primary Examiner, Art Unit 2424